

information: "This sort grows naturally at Philadelphia, from whence the seeds were sent me by Dr. BenseL." But in addition to this, his beautiful colored plate 254, fig. 2, one of the few colored plates of *Solidago* ever published, makes the identification of his species very certain.

*Solidago conferta* Miller is the species which many years later was called *Solidago speciosa* by Nuttall, and we must adopt the appropriate name of Miller instead of Nuttall's excellent name.

MAPLEWOOD, NEW JERSEY.

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## ON ERAGROSTIS PEREGRINA AND ITS RELATIVES.

H. W. PRETZ.

THE publication of *Eragrostis peregrina* Wiegand as a new species<sup>1</sup> and a local collection of this species at about the same time both served to awaken interest in a group of weed species that previously had received scant attention excepting for a mild inquiry concerning the proper identity of *Eragrostis caroliniana* (Spreng.) Scribn. and *Eragrostis pilosa* (L.) Beauv. With the full intention of making some note of the occurrence of *E. peregrina* in the local region, it was planned to give especial attention in connection with regular field work to the collection and observation of this and related species of the group but this field program was very nearly abandoned because from the very first *E. peregrina* was found to be of very frequent local occurrence. However, the apparent scarcity of material in herbaria as published by Professor Wiegand led to a renewal of interest with the result that many collections and observations were made in the years from 1918 to 1921. The intention of offering some note of this at the time was not realized but it is believed that a summary of the results of these collections and observations in the local region together with those of subsequent years may be of some value and interest and they are here briefly offered.

The first local collection of *E. peregrina* was made along a railroad but it was soon learned that, although of general occurrence and an expected species about railroad stations as well as along railroad property away from them, the plant was apparently not at all definitely related

<sup>1</sup> A new species of *Eragrostis* of the Old World and North America. K. M. Wiegand. *RHODORA*, Vol. 19, June 1917, No. 222, Pp. 93-96.

to the railroad so often responsible for weed introductions. It occurred not only about the towns and villages but about country churches and schoolhouses, farmyards or farm buildings, and, not infrequently, along roadsides usually closely adjacent to farm buildings or villages—places often unconnected with and away from railroads. Once it was collected along a sparsely grassy road trail through woods that was subsequently found to lead to farm buildings.

Though found so generally about farms, etc., that its occurrence came to be expected, some such places were found where it was apparently absent and it appeared to be absent from some areas of waste ground and some other places where it might reasonably have been expected to occur. An apparent absence of this kind was once noted (1924) in passing several groups of farm buildings for a distance of a few miles along the Little Lehigh creek which flows here through a limestone valley although the plant is present at places in the limestone region adjacent. Also, at some country schoolhouses and churches it was quite abundant, at others it was found only sparsely present after careful search, and at a few appeared to be absent altogether. However it is only fair to say that for lack of time or opportunity thorough search was not always possible. At a farm west of Kutztown in Berks county there appeared to be none in sight about the very favorable looking habitat furnished by the farmyard but after careful search some was found growing in a weedy, turfy association close to the farmhouse fence so that its absence can not safely be presumed unless thorough and careful search be made. In some farmyards it was found to grow abundantly even in areas where severely trampled and it has been observed in such places as well as elsewhere to occur with thick weedy association. Where it occurred along roadsides it was always as a weed, or with the weedy association, of more or less disturbed ground.

In Allentown it has been noted practically throughout the city as a roadside gutter species in unpaved streets, on sidewalks, on cinder or soil strips between pavement and curb on sidewalks, about sidewalk openings around trees, on brick strips of sidewalks, etc. At one place close to the business centre of the city where streets are all paved it has been noted in chinks and hollows on one part of the stone covered plaza of the county courthouse. Across the street on a pavement it fairly outlines in its very abundance the bricks of the strip on either side of the flagstones and has almost the appearance of

a turf. At still another corner it has been noted for years in a slight depression protected from footsteps and where slight soil exists in such a brick strip beside a marble steps. Similar conditions prevail in small towns and villages where it has been found to occur sparsely, abundantly or frequently along gutters, sidewalks, etc.,—conditions so largely identical with those noted for the Philadelphia region by Mr. Bayard Long<sup>1</sup> that further detailed record here seems unnecessary.

As a guest, a few trips were made by automobile through parts of counties adjacent to Lehigh upon which there were some opportunities to make a few collections and observations. On one of these trips from Riegelsville along the Delaware river through upper Bucks county adjacent to Lehigh county, collections were made at two places in Riegelsville, about a road at the sheds of an old historic Mennonite church near Pleasant Valley, and at a farm near Fairmount, all widely separated stations. On another trip to near Douglassville along the Schuylkill river, a distance of over thirty-five miles from Allentown, collections were made in Berks county at a schoolyard at Bally, a schoolyard between Eschbach and Bechtelsville, on a pavement about in the business centre of Boyertown, a roadside entrance to a farmyard near Douglassville, and before the hitching post of the hotel at Amityville, all widely separated stations. Short excursions of like character have been made westward into Berks county and, besides one collection from a farmyard near Kutztown, a number of occurrences in this general region have been noted. More recently on trips afoot it has been collected at Bingen railroad station in Northampton county and it has been observed at a schoolyard and two roadside stations near to farm buildings (three widely separated stations) along another road in upper Bucks county closely adjacent to Lehigh county. The observations and collections on these few trips certainly lead strongly to the inference that the occurrence of *E. peregrina* is very similar to that observed more intimately in Lehigh county.

Though collections were not made from many observed localities, a series of collections of *E. peregrina* numbering seventy-five was made in Lehigh county alone. Of these, sixteen came from about Allentown and some few others might be considered as duplicating a locality. Similarly, over sixty collections of *E. caroliniana* were made, twenty-

<sup>1</sup> *Eragrostis peregrina* a frequent plant about Philadelphia. Bayard Long, RHODORA, Vol. 20, Oct. 1918, No. 238, Pp. 173-180.

four of which came from about Allentown. *E. pilosa* is represented by twenty-three collections in Lehigh county from fourteen localities. In the region under observation outside of Lehigh county, eleven collections of *E. peregrina* and three collections of *E. caroliniana* were also made. A series of these collections is at the Academy of Natural Sciences of Philadelphia where they have come under the observation of Mr. Bayard Long who in addition to thus verifying determinations has been of most valuable assistance in confirming by his own experience some of the observations recorded in this note, as well as in other ways.

These collections consist of several hundred individual plants bearing panicles ranging in condition from immature to overripe and showing wide variation in luxuriance, habit of growth, etc., at least in part correlated with the habitat in which they were found to occur. Such a series, collected primarily for distributional data, naturally offers a good opportunity for further study of the species in relation to the species group of which it is a member but it is not the purpose of this note to add to the published diagnosis by Wiegand<sup>1</sup> and Long<sup>2</sup> of the characters of this admittedly complex species group. In spite of the rather wide variation displayed in these collections of members of this species group, examination of the material has shown the characters as already published to have strong validity. Although the material collected could be quite consistently referred to the separate and respective specific units, the need for further study in the group was constantly recognized.

The very abundance of material observed (as well as collected) in the region has made even a record of some general observations or impressions as to distribution, habit, etc., gained through field work seem hazardous. Frequently *E. peregrina* was found occurring with *E. caroliniana* but each has been found to occur where the other was apparently absent and their coincidence appears to be purely accidental. Though erratic in distribution like many other weed species, both of these species were found to be widespread in frequency throughout Lehigh county, if not general, but there appeared to be no relation between them as to comparative abundance, which was a matter of great variation in both species. For instance, at one place hundreds

<sup>1</sup> A new species of *Eragrostis* of the Old World and North America. K. M. Wiegand. *RHODORA*, Vol. 19, June 1917, No. 222, Pp. 93-96.

<sup>2</sup> The specific characters of *Eragrostis peregrina* and its two allies. Bayard Long, *RHODORA*, Vol. 21, Aug. 1919, No. 248, Pp. 133-140.

of plants of *E. caroliniana* lined for a short distance both sides of a country dirt road about the distance of a city block away from any farmhouse while *E. peregrina* was confined, as far as could be determined after some search, to a very limited occurrence of comparatively few plants. It would seem that, as already noted, both *E. peregrina* and *E. caroliniana*, though occurring in cinder or other ballast along railroads and in some waste ground, normally are elsewhere plants of disturbed ground related to habitations and usually found closely adjacent to them.

The truth of Professor Wiegand's statement that *E. peregrina* "can be readily recognized by its general appearance" was abundantly demonstrated in the field. After some experience it was even felt that—together with *E. caroliniana*—it could be fairly or even rather confidently recognized, especially where it grew abundantly, from moving cars, automobiles, etc. Though it has not been necessary to use such observations for the purposes of this note, observations of this kind were often helpful in marking or locating occurrences from which collections and observations later were made. Though both of these species vary considerably in height and luxuriance mainly according to habitat, *E. caroliniana* is more normally the taller in average material. It is also normally a larger, bushier, more diffuse plant of many more slender, ascending branches than *E. peregrina*, which is normally smaller, more stocky or stout in appearance, even in small or tiny plants, and with a greater tendency of spreading its fewer stouter branches horizontally on the ground to a node from which the stem arises upright. Plants of *E. caroliniana* are lighter green in color than *E. peregrina* and in one place, visited several times, where the two species grew together, they appeared to be readily separable vegetatively before they came into flower or fruit.

Any difficulty<sup>1</sup> that has arisen in the ready recognition of the members of this species group in the field, has come through the presence in the local area of a plant apparently referable to *E. pilosa*. Unlike *E. peregrina* and *E. caroliniana* of rather general distribution, as far as known, this latter plant appears to have a distribution in the local area that is quite different and only in part coincident with the above named species. Collections and observations appear to indicate that

<sup>1</sup> *Eragrostis Frankii* Steud., collected at fifteen stations in Lehigh county and observed at others, has proven to be readily distinguishable in the field from the members of the species group here considered.

this species occurs in its greatest frequency across the "shale" region parallel and quite closely adjacent to the Kittatinny or Blue mountains in Lehigh county. It has been collected at a few rather widely separated stations in the "shale" region southward and at two places in the Saucon valley south of the South mountains. A few very small plants apparently referable to *E. pilosa* were collected with some equally poor or depauperate material of *E. peregrina* on the cinder roadbed of the Perkiomen Railroad along the base of the north slope of the South mountains southwestward of Emaus station but elsewhere locally it has not been found to occur like the frequent and often abundant *E. peregrina* and *E. caroliniana* about railroads. It has been found to occur alone or with either *E. peregrina* or *E. caroliniana*, or both, but elsewhere than over this range in Lehigh county it has not been detected in the local region.

Though associated with habitations, *E. pilosa* has been collected and observed to occur along roadsides especially where fields are ploughed to the edge of the road or its gutter, about unworn spots of road intersections or little used dirt roads, etc. In such places it is frequently quite abundant. Near habitations or at road intersections where it may be trampled and grow in low turf-like mats, it may appear quite deceptively like abundant *E. peregrina* in general appearance. *E. pilosa* normally appears to be a taller, more slender, generally erect, plant than *E. peregrina* but otherwise in general appearance it suggests a stronger relationship or affinity with that species than with *E. caroliniana* which however in turn in general appearance seems more closely related to *E. pilosa* than to *E. peregrina*. This impression that *E. peregrina* and *E. caroliniana* appear to be more closely related to *E. pilosa* than to each other has merely been suggested by such difficulties as developed through abundant experience in the recognition of the members of this species group by appearance in the field and not through any analysis of the characters. That the panicles of *E. pilosa* are of a deeper, more reddish, purple color than in *E. peregrina* is probable but by no means certain. The impression prevails that the more grayish purple of local *E. caroliniana* is quite readily distinguishable from the color of *E. peregrina* but *E. pilosa* offers more difficulty in this respect.

There is a most striking difference between *E. pilosa* and both *E. peregrina* and *E. caroliniana* in the time of first fruiting. Both of the latter first come into flower and fruit at about the same time

though possibly *E. peregrina* may be slightly the earlier. *E. peregrina* has been noted as early as June 20th (1921) along the streets of Allentown with panicles spread in fresh flowering or fruiting condition and this date might be accepted as approximate for extreme earliness for the species locally. Similarly *E. caroliniana* has been collected as early as June 30th (1918). Local field experience has shown that *E. pilosa*<sup>1</sup> is about a month later—or even more—in reaching a similar condition. Recently (1925) three roadside stations for *E. pilosa* were visited on July 12th and August 30th in an effort to confirm further this observation. At one station a grassy association had spread out over the little used road and no *Eragrostis* was detected at all. On the earlier date at one of the other stations no *Eragrostis* was found after careful search and at the other a few plants with rather fresh immature panicles, mostly unexpanded, were discovered that could be referred to *E. pilosa*. Later however on August 30th, *E. pilosa* was found in fair abundance locally along the roadsides at both of these latter stations with fresh panicles. Late in the season all three species may be found in fresh flowering or fruiting condition together and it has not been possible to correlate this late fruiting of seemingly fresh plants of *E. peregrina* and *E. caroliniana* after the first or early fruiting plants—a condition that must not be confused with fresh bloom from the lower nodes of old plants with barren panicles of earlier fruiting.

As far as known there have been few published records of the occurrence of *E. peregrina* since Mr. Bayard Long has shown it to be a widely distributed species in the Philadelphia and adjacent region.<sup>2</sup> A survey of those parts of Lehigh county visited has shown *E. peregrina* to be widespread and abundant and to occur, not as a waif, a new, casual or spontaneous introduction, but as a weed firmly established by long occupancy,<sup>3</sup> even though displaying all the erratic

<sup>1</sup> There was less opportunity to observe *E. pilosa* in the field than in the case of either of the other two more widely distributed species. However at one place where the species was abundant it was possible with comparatively little effort to secure a number of plants in which the first branch of the panicle was single instead of the usual two or a whorl of branches which is a character of *E. pilosa* so constant as to be almost distinctive. *E. peregrina* appears consistently to have the first branch of the panicle single.

<sup>2</sup> *Eragrostis peregrina* a frequent plant about Philadelphia. Bayard Long, RHODORA, Vol. 20, Oct. 1918, No. 238, Pp. 173–180.

<sup>3</sup> It may be interesting to note in this connection that *E. peregrina* was collected about Philadelphia as early as 1864 and that two collections in the Porter herbarium from Lancaster, Pennsylvania—a town in Lancaster county over fifty-five miles southwest of Allentown and in the drainage of the Susquehanna river—were made in 1889 and 1898. See paper of Mr. Bayard Long, cited above.

characteristics in behavior, frequency, etc. of a weed species. This condition is shared by *E. caroliniana* and, in part, by *E. pilosa* of this species group. Mr. Long has shown conditions and the distribution in the Philadelphia and adjacent region to be largely identical and has also shown a general relationship with the local region through several outlying stations, one of them from Lehigh county. It is strongly presumed from the observations and collections already made in the counties adjacent to Lehigh county that conditions in these areas will be found on more intimate investigation to be quite similar to those in Lehigh county. The general region northward toward and in the mountains beyond the limits of Lehigh county has not been touched and the outposts locally have not been reached. Thus there has been neither time nor opportunity to extend further the limits of occurrence of *E. peregrina* in the general local region. However in this brief note, apart from the specific conditions noted for Lehigh county, a general relationship with the Philadelphia region has been definitely indicated and it is hoped some information has been offered that will not only be useful in an understanding of the general relationship of this highly complex and difficult species group but that will be helpful as well in establishing the general distribution of *E. peregrina* in America.

ALLENTOWN, PENNSYLVANIA.

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#### USAGE.

KENNETH K. MACKENZIE.

IN an article which has just appeared in RHODORA (28: 138) Mr. Weatherby touches on many points. He most earnestly and fully believes in his point of view and is therefore entitled to the fullest respect for his views. He deals with a number of different subjects. He fails to consider where his suggestions would lead, if applied. He is often delightfully vague. Some of the matters touched on are not of any general importance, but there are others which do very much deserve notice.

In the first place, it should be emphasized that the greatest curse which science has to deal with is laziness and mental inertia—the desire that because one has learned a thing in a certain way, that it should always remain that way. A matter so learned to an in-